

**TECHNICAL REVIEW AND EVALUATION
OF APPLICATION FOR
AIR QUALITY PERMIT NO. 58528**

Sturm, Ruger and Company, Inc.

I. INTRODUCTION

This Class II renewal air quality operating permit is issued to Sturm, Ruger and Company, Inc., the Permittee, for the continued operation of a small arms manufacturing facility located in Yavapai County in Prescott, Arizona. This permit is a renewal of Air Quality Permit #45606.

A. Company Information

1. Facility Name: Sturm, Ruger & Company Prescott Facility
2. Facility Location: 200 Ruger Road, Prescott, AZ 86301
3. Mailing Address: 200 Ruger Road, Prescott, AZ 86301-6181

B. Attainment Classification

The facility is located in an area that is classified as an attainment area for all criteria pollutants.

II. PROCESS DESCRIPTION

A. Processes

Gun parts received at the facility go through multiple rounds of grinding, sanding, and polishing to remove extra metal and bring individual parts to specification. On-spec gun parts are treated with heat to alter the physical/chemical properties of the metal parts. The heat is generated by combustion of natural gas and methanol is injected during the heat treatment process to provide liberated carbon for hardening the metal. Grit blasting is utilized to clean and texturize treated gun parts and prepare them for the bluing/pickling process. Gun parts are immersed into various chemical baths during the bluing/pickling process to generate a layer of protective coating against rust. Gun parts are assembled and then test fired on a gun range prior to shipment offsite. Miscellaneous operations at the site include small-scale painting, cooling towers, methanol storage tanks, and an emergency generator. Proposed future operations per this permit application include a new gun range and dust collector, re-arranged bluing process with a new scrubber, oil-water evaporator, storage tote for the oily wastewater, and an additional hydrochloric acid tank.

B. Control Devices

Several wet and dry dust collectors are used in the grinding, sanding, and polishing process to control particulate matter emissions. A fume scrubber is used

in the bluing/pickling process to control volatile organic compound (VOC) and hazardous air pollutant (HAP) emissions and to control emissions from the high temp. salt tanks in the heat treatment process. A new scrubber will be used to control emissions from the future re-arranged bluing process. A dust collector is used in the grit blasting operations to control particulate matter emissions from the grit blasting booths. Dust collectors are used for the current gun ranges to control particulate matter emissions and a new dust collector will be used for the future new gun range.

III. EMISSIONS

Emissions at the facility are generated from the various processes through dust generating operations, combustion of natural gas or diesel, evaporation from tanks and cooling towers, and painting. Dust collectors and scrubbers are utilized by the facility to minimize the emissions. Table 1 below lists the facility's controlled PTE. Information on uncontrolled PTE can be found in the permit application.

Table 1: Potential Emissions (controlled)

Pollutant	Emissions (tons per year)
PM	13.48
PM₁₀	13.48
PM_{2.5}	13.48
NO_x	11.96
CO	3.38
SO₂	0.06
VOC	0.54
GHG (expressed as CO₂e)	1,744
HAPs	0.61

IV. APPLICABLE REGULATIONS

Table 2 displays the applicable requirements for each permitted piece of equipment along with an explanation of why the requirement is applicable.

Table 2: Verification of Applicable Regulations

Unit	Control Device	Rule	Verification
Small Arms Manufacturing (all equipment except fuel burning equipment and emergency generator)	Various dust collectors and scrubbers	A.A.C. R18-2-730.A.1.a A.A.C. R18-2-730.B A.A.C. R18-2-730.D A.A.C. R18-2-730.F A.A.C. R18-2-730.G	These rules are applicable to unclassified sources not otherwise subject to standards of performance under Articles 7, 9, or 11 of A.A.C. Title 18, Chapter 2.
		A.A.C. R18-2-702.B.3 A.A.C. R18-2-702.C	These rules are general provisions for all existing, stationary, point sources not otherwise subject to opacity standards relating to specific types of sources covered elsewhere in Chapter 2 of A.A.C. Title 18.
Fuel Burning Equipment (bluing/salt bath heaters, Col Met oven, carburizing furnaces, tempering furnace, endo gas generator, and oil-water evaporator)	None	A.A.C. R18-2-724.B A.A.C. R18-2-724.C.1 A.A.C. R18-2-724.J	These rules are standards of performance for fossil-fuel fired industrial and commercial equipment. They are applicable to industrial and commercial installations which are less than 250 MMBtu/hr capacity, but in the aggregate on any premises are rated at greater than 0.5 MMBtu/hr, and in which fuel is burned for the primary purpose of producing steam, hot water, hot air or other liquids, gases, or solids and in the course of doing so the products of combustion do not come into direct contact with process materials.
Emergency Generator	None	A.A.C. R18-2-719.B A.A.C. R18-2-719.C.1 A.A.C. R18-2-719.E A.A.C. R18-2-719.F A.A.C. R18-2-719.H A.A.C. R18-2-719.I A.A.C. R18-2-719.J	These rules are standards of performance for existing stationary rotating machinery. They are applicable to all stationary gas turbines, oil-fired turbines, or internal combustion engines.
		40 CFR 63.6603(a) 40 CFR 63.6625(e) 40 CFR 63.6625(f) 40 CFR 63.6625(h) 40 CFR 63.6625(i) 40 CFR 63.6640(f) 40 CFR 63.6655(e) 40 CFR 63.6655(f) Table 2d to Subpart ZZZZ	These NESHAP rules from 40 CFR 63 Subpart ZZZZ are applicable to stationary reciprocating internal combustion engines located at an area source of HAP emissions.

Unit	Control Device	Rule	Verification
Fugitive Dust Sources	Water or an equivalent control	A.A.C. R18-2-604.A A.A.C. R18-2-604.B A.A.C. R18-2-605 A.A.C. R18-2-606 A.A.C. R18-2-607 A.A.C. R18-2-608 A.A.C. R18-2-614	These rules are applicable to existing and new nonpoint sources of emissions not otherwise subject to regulation under Articles 7 or 9 of A.A.C. Title 18, Chapter 2.
		A.A.C. R18-2-702.B.3 A.A.C. R18-2-702.C	These rules are general provisions for all existing, stationary, point sources not otherwise subject to opacity standards relating to specific types of sources covered elsewhere in Chapter 2 of A.A.C. Title 18.
Mobile Sources (if applicable)	None	A.A.C. R18-2-801 A.A.C. R18-2-802 A.A.C. R18-2-804	These rules are applicable to mobile sources which either move while emitting air contaminants or are frequently moved during the course of their utilization.
Abrasive Blasting (if applicable)	Enclosure	A.A.C. R18-2-726	These rules are applicable to any abrasive blasting operation.
		A.A.C. R18-2-702.B.3 A.A.C. R18-2-702.C	These rules are general provisions for all existing, stationary, point sources not otherwise subject to opacity standards relating to specific types of sources covered elsewhere in Chapter 2 of A.A.C. Title 18.
Spray Painting (if applicable)	Enclosure	A.A.C. R18-2-727	This rule is applicable to any spray painting operation.
		A.A.C. R18-2-702.B.3 A.A.C. R18-2-702.C	These rules are general provisions for all existing, stationary, point sources not otherwise subject to opacity standards relating to specific types of sources covered elsewhere in Chapter 2 of A.A.C. Title 18.
Demolition/Renovation Operations (if applicable)	N/A	A.A.C. R18-2-1101.A.8	This rule is applicable to any asbestos related demolition or renovation operations.

V. PREVIOUS PERMIT CONDITIONS

Permit No. 45606 was issued on February 20, 2009, for the continued operation of this facility. Table 3 below illustrates if a section in Permit No. 45606 was revised, kept, or deleted.

Table 3: Permit No. 45606

Section No.	Determination			Comments
	Revised	Keep	Delete	
Att. "A"	X			General Provisions - Revised to represent most recent template language and to add Sections XXII and XXIII.
Att. "B" Section I	X			Facility Wide Requirements – Deleted I.D.2 from old Permit #45606. Added I.A.2 in new Permit #58528. Reworded and/or combined some conditions for readability.
Att. "B" Section II	X			Small Arms Manufacturing – Added II.B.1, 2, and 3 in new Permit #58528. Added II.C.1.b and c in new Permit #58528. Changed monthly opacity observation emission points in new Permit #58528 in II.C.2. Restructured and reworded air pollution control requirements in II.B.3 from old Permit#45606 into new format in II.C.3 and II.D.1 in new Permit #58528 to match current configuration of dust collectors and scrubbers. Reworded and /or combined some conditions to match current regulations and for readability.
Att. "B" Section III	X			Col-Met Oven and Bluing/Salt Bath Heaters – Changed the title of this section to Fuel Burning Equipment in new Permit #58528 and revised the applicable equipment. Reworded and/or combined some conditions to match current regulations and for readability.
Att. "B" Section IV	X			Generator – Changed the title of this section to Emergency Generator in new Permit #58528. Deleted IV.B.1 and 2 from old Permit #45606. Moved IV.C.1 from old Permit #45606 to IV.C.1.b in new Permit #58528. Combined and reworded IV.D.2.a and IV.E.2.a from old Permit #45606 into IV.C.2.c. in new Permit #58528. Added new section IV.D in new Permit #58528 to incorporate the applicable NESHAP rules from 40 CFR 63 Subpart ZZZZ for an emergency generator. Reworded and/or combined some conditions to match current regulations and for readability.
Att. "B" Section V	X			Fugitive Dust Requirements - Revised to reflect the most recent permitting language.
Att. "B" Section VI	X			Mobile Source Requirements - Revised to reflect the most recent permitting language.
Att. "B" Section VII	X			Other Periodic Activity Requirements - Revised to reflect the most recent permitting language.
Att. "C"	X			Equipment List - Revised to reflect the current equipment operating at the facility per application for new Permit #58528.

VI. MONITORING, RECORDKEEPING, AND REPORTING REQUIREMENTS

A. Facility Wide

1. Along with the annual compliance certifications, the Permittee is required to submit reports of all monitoring activities required by Attachment "B" of the permit.
2. The Permittee is required to maintain on-site records of the manufacturer's specifications for all equipment.
3. The Permittee is required to maintain records of all emission related maintenance activities performed on the emissions units.

B. Small Arms Manufacturing

1. The Permittee is required to show compliance with the opacity standard by having a Method 9 certified observer perform a monthly visual survey of visible emissions from each of the stacks associated with the equipment identified for this permit section and from the cooling towers. The observer is required to conduct a 6-minute Method 9 observation if the results of the initial visual survey appear on an instantaneous basis to exceed the applicable standard. The Permittee is required to keep records of all surveys and observations and as required, take corrective actions and report excess emissions.

C. Fuel Burning Equipment

1. The Permittee is required to keep records of fuel supplier certifications containing information regarding the name of the fuel supplier and the lower heating value of the fuel.
2. The Permittee is required to report all six-minute periods in which the opacity of any plume or effluent exceeds the opacity standard as an excess emission.

D. Emergency Generator

1. The Permittee is required to show compliance with the opacity standard by having a Method 9 certified observer perform a quarterly visual survey of visible emissions from the emergency generator stack when the emergency generator is in operation. The observer is required to conduct a 6-minute Method 9 observation if the results of the initial survey appear on an instantaneous basis to exceed the applicable standard. The Permittee is required to keep records of all surveys and observations and as required, take corrective actions and report excess emissions.
2. The Permittee is required to record daily the sulfur content and lower heating value of the fuel being fired in the emergency generator.
3. The Permittee is required to report to the Director any daily periods during which the sulfur content of the fuel being fired in the emergency generator exceeds 0.8%.
4. The Permittee is required to keep records of fuel supplier certifications to

demonstrate compliance with the sulfur content limit. The certifications shall contain the name of the fuel supplier, the sulfur content of the fuel, and the method used to determine the sulfur content of the fuel.

5. The Permittee is required to keep records of the hours of operation of the emergency generator that is recorded through the non-resettable hour meter and to specify if the hours are for emergency operation or for non-emergency operation.
6. The Permittee is required to keep records of the maintenance conducted on the emergency generator.

E. Fugitive Dust

1. The Permittee is required to keep records of the dates and types of dust control measures employed.
2. The Permittee is required to show compliance with the opacity standards by having a Method 9 certified observer perform a monthly visual survey of visible emissions from the fugitive dust sources. The observer is required to conduct a 6-minute Method 9 observation if the results of the initial survey appear on an instantaneous basis to exceed the applicable standards. The Permittee is required to keep records of all surveys and observations and as required, take corrective actions and report excess emissions.

F. Mobile Sources

1. The Permittee is required to keep records of all emission related maintenance performed on the mobile sources.

G. Other Periodic Activities

1. The Permittee is required to record the date, duration, and type of control measures employed each time an abrasive blasting project is conducted.
2. The Permittee is required to record the date, duration, type of control measures employed, material safety data sheets (MSDSs) for all paints and solvents used, and amount of paint used each time a spray painting project is conducted.
3. The Permittee is required to keep records of all asbestos related demolition or renovation projects. The required records shall include the "NESHAP Notification for Renovation and Demolition Activities" form and all supporting documents.

VII. TESTING REQUIREMENTS

There are no testing requirements during the term of this renewal permit.

VIII. LIST OF ABBREVIATIONS

A.A.C. Arizona Administrative Code
ADEQ Arizona Department of Environmental Quality
Att. Attachment

CFR.....	Code of Federal Regulations
CO.....	Carbon Monoxide
CO ₂	Carbon Dioxide
CO ₂ e.....	Carbon Dioxide Equivalent
GHG.....	Greenhouse Gas
HAP.....	Hazardous Air Pollutant
hr.....	Hour
MMBtu.....	Million British Thermal Units
MSDS.....	Material Safety Data Sheet
NESHAP.....	National Emission Standards for Hazardous Air Pollutant
NO _x	Nitrogen Oxide
PM.....	Particulate Matter
PM ₁₀	Particulate Matter Nominally less than 10 Micrometers
PM _{2.5}	Particulate Matter Nominally less than 2.5 Micrometers
PTE.....	Potential-to-Emit
SO ₂	Sulfur Dioxide
VOC.....	Volatile Organic Compound